

CLAIMS

1. Machine for the continuous cabling or twisting and setting of yarns, comprising several treatment stations
5 incorporating, in combination and in succession, within the same work position:

- means (1) for cabling or twisting a yarn;
- heat-setting means consisting of a heated rotary godet which has configurations capable of
10 allowing the shrinkage of the yarn to be controlled the said configurations consisting of a longitudinal profile defining successive zones that extend over almost the entire length of the said godet, namely an initial crimp pick-up zone (2a), a residual shrinkage
15 zone (2b) and a setting zone (2c),

- an accumulator (3) capable of cooling and relaxing the yarn in the completely free, tensionless state; and

- means (4) for winding on or winding up the yarn
20 (5),
the said means being subjected to means for driving and guiding the yarn.

2. Machine according to Claim 1, characterized in
25 that, at the or each treatment station, the cabling or twisting means (1), heat-setting means (2) and winding-on means (4) are mounted in combination with devices for forwarding the yarn and arrangements of the frame of the said machine, so as to delimit a small and
30 compact space that incorporates the yarn wind-off means (6), along a yarn path of short length.

3. Machine according to Claim 1, characterized in that the initial crimp pick-up (2a) and residual
35 shrinkage (2b) zones consist of conical bearing surfaces, while the setting zone (2c) consists of a cylindrical bearing surface.

4. Machine according to Claim 3, characterized in

that the two conical bearing surfaces (2a) and (2b) have different cone angles, the residual shrinkage zone (2b) having a smaller angle than the initial crimp pick-up zone (2a).

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5. Machine according to Claim 1, characterized in that the length of the setting zone (2c) is greater than the sum of the lengths of the two other zones (2a) and (2b).

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6. Machine according to Claim 1, characterized in that the initial crimp, residual shrinkage and setting zones consist of a curved profile.

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7. Machine according to Claim 1, characterized in that the heated godet (2) is subjected to means capable of allowing automatic reeving of the yarn.

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8. Machine according to Claim 1, characterized in that the accumulator (3) consists of a hollow straight body placed approximately vertically, the end of which, considered on the output side, is frustoconical in order to create, within the said body, a buffer zone braking the output of the said yarn by preventing it from leaving directly.

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9. Machine according to Claim 8, characterized in that, at the outlet of the accumulator (3), the yarn is subjected to the action of bars (8) capable of uncurling the yarn and giving it the tension needed for winding-on.

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10. Machine according to Claim 1, characterized in that the accumulator (3) consists of a relaxation belt in which the yarn forms a reserve, the said belt being placed between the heated godet (2) and the wind-up means (4), the wind-up speed being regulated so that the amount of accumulated yarn in reserve is maintained between two predetermined values, a minimum value and a

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maximum value.

11. Machine according to Claim 8 or 10, characterized
in that the yarn (5) is deposited in the accumulator
5 (3) through the effect of a relative movement between a
guiding element and the accumulator itself.

12. Machine according to Claim 11, characterized in
that the relative movement is created by a displacement
10 of the yarn guiding element.

13. Machine according to Claim 11, characterized in
that the relative movement is created by a displacement
of the accumulator itself.

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14. Machine according to Claims 8 to 13, characterized
in that each treatment station comprises, in succession
starting from the wind-off bobbin:

- a yarn cabling or twisting spindle (1);
- 20 - a presser/deliverer member (7) limiting the
tension of the yarn and setting a level of twist
downstream;
- the heated rotary godet (2);
- the cooling accumulator (3);
- 25 - the uncurling bars (8); and
- the winding-on or wind-up bobbin (4).